

Everywhere, at the present time, the movement is on foot to erect barriers to prevent the sale to the laity of habit-forming drugs. In our own state the Board of Pharmacy has been very active in arresting and prosecuting pharmacists who have violated the law and sold habit-forming drugs to people without a physician's prescription. They have done splendid work and in almost every instance they have secured convictions. It is good work and should receive our most hearty support and commendation. But the board is handicapped by two things. One is the refilling of prescriptions, to prevent which there is, at the present time, no law. The other is a condition humiliating to mention; it is the existence of a certain few most despicable physicians who make it a business to write prescriptions for dope fiends. Fortunately, there are not many such, but there are a few and in some sections they work havoc with the honest efforts of the Pharmacy Board to stamp out the sale of drugs of this class. Is there not some way in which these vilest of human beings, who betray their trust and wreck human lives where they have undertaken to save them, can be reached? It would seem as though there ought to be some way of getting at these fiends and putting a stop to the criminal debauch of their profession—and ours. They bring contempt upon us all, and ignominy upon our profession. We can certainly aid the board in passing a law preventing the indiscriminate refilling of prescriptions, but is there nothing that we can do to purge our profession of these dastardly disgraces to it? Any suggestions will be more than welcome.

WHAT IS A PRACTICAL EXAMINATION IN ANATOMY?

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We often hear the remark, made by those who are expecting to take the examination of the State Board, that if the examinations were practical they would have no difficulty in passing. That word "practical" is a hard word to define. "Practical Medicine" is a phrase frequently used by men of all schools. It is needless to note that what is considered practical medicine by one medical sect receives scant valuation by another.

Probably each examiner tries according to his understanding to give a practical examination. The examinations in anatomy have been evolved after much thought. The results of these examinations furnish some interesting facts for the consideration of the profession at large. Since it is not necessary to argue that a physician should be acquainted with the structure of the body I will merely analyze some of the results of the test given August 4th of this year.

Anatomy as given us in elaborate description by Gray, Morris, Gerrish, and others, leaves us surfeited with details of word analysis but usually without practice in coordinating series of facts, therefore our knowledge of this important subject slips from us under the attack of new subjects usually classed as "practical."

Since our board is non-sectarian and has no duty to perform in the matter of catechising the applicants as to medical theories, questions should be made to touch the common understanding of fundamental subjects at their most important points. It is easy enough to state this proposition but difficult to put it into practice.

Every practitioner is likely to meet cases of internal or external hydrocephalus, meningitis, or other conditions calling for some knowledge of the meninges and the spaces containing cerebro-spinal fluid. It seemed that the question, "Describe the subarachnoid space and its connection with the ventricles," would serve to bring out those larger facts which ought always to be remembered. Many of the answers were very surprising. The general average of the 140 applicants on this question was 6.4+. Since I do not know who wrote the answers I quote some of them here on account of the general interest they may arouse in the subject of better teaching of anatomy in our colleges. Out of the great wealth of more or less profound misconceptions furnished me in the answers, the following eight are good examples:

1. "It bears direct relation to ventricles via velum interpositum which is a prolongation of the choroid plexus—spinal fluid being drained and passing thence through subarachnoid space in direct communication with spinal cord thence down spinal canal."

2. "Subarachnoid space is that space lying beneath the subarachnoid membrane and above the pia mater and contains the blood vessels and lymphatics which go to supply the brain substance, also the cerebro-spinal fluid circulating here can easily diffuse through the pia mater into the ventricles of the brain thereby causing an equilibrium of the hemispheres of the brain within the skull. The cerebro-spinal fluid is obtained from the diffusion from the vessels and lymphatics, which when the subarachnoid space is emptied of fluid by lumbar puncture it immediately refills from the vessels."

3. "Subarachnoid space lies at the base of and between the hemispheres of the brain and opens into the ventricles."

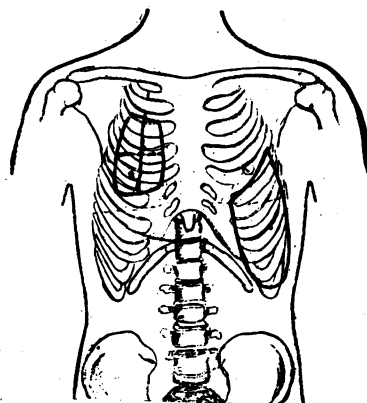
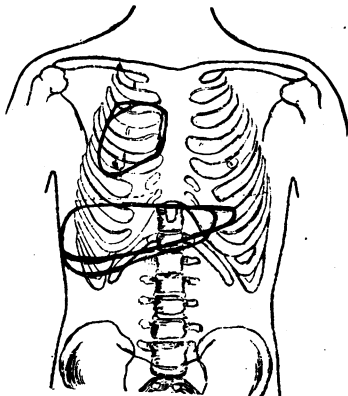
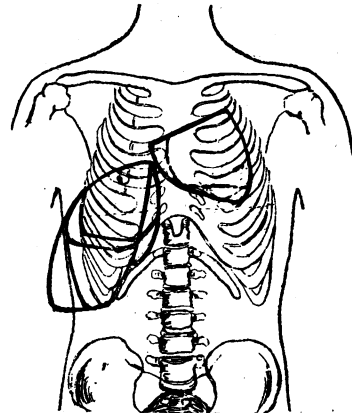
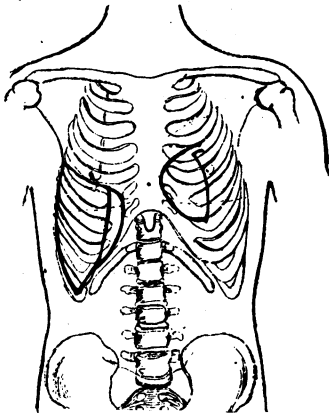
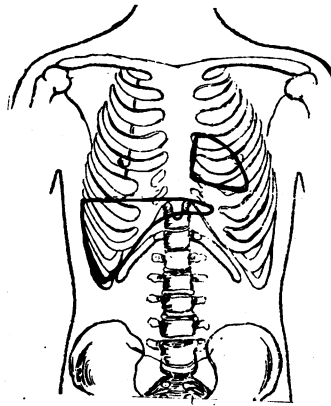
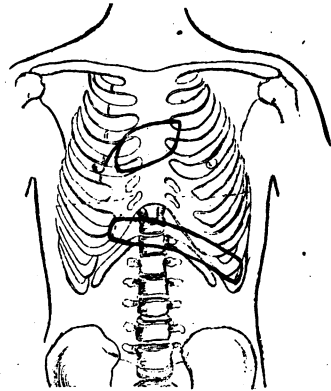
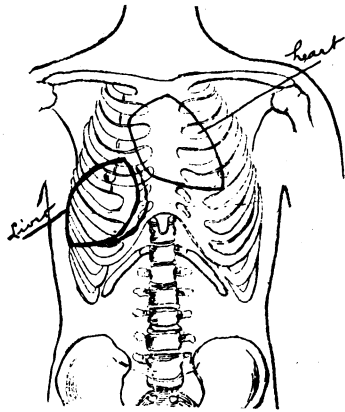
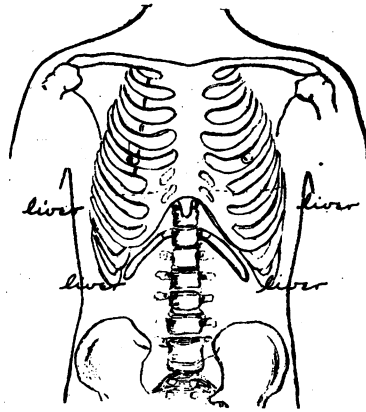
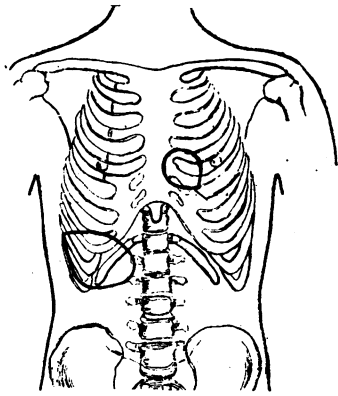
4. "The subarachnoid space is the space occupied by the longitudinal sinus and which dips between the ventricles allowing the blood more room in the sinus."

5. "The central canal of the cord is the remains of the neural canal of the germinal vesicle."

"Forms a direct communication through the entire length of the cord and the fourth ventricle which is an expanded portion of the canal. The two lateral ventricles communicate with the fourth by the third ventricle. The canal terminates in the cauda equina of the cord where it connects with the subarachnoid space."

6. "The subarachnoid space lies between the closely investing pia mater membrane and the thinly spread arachnoid. The communication is through the central canal of the cord up through third and fourth ventricles and two lateral ventricles."

7. "Subarachnoid space is the interval between



the arachnoid and pia mater of the meninges covering the brain. Is connected with the ventricles by the lymphatic vessels and veins of Galen."

8. "The subarachnoid space is formed by the dipping down of the arachnoid membrane forming spaces connecting the cerebral and cerebro-spinal centers containing the cerebro-spinal fluid, thus allowing a free movement of the fluid."

The second question was designed to bring out some points in osteology. Accidents involving injury to the head are so numerous that it seemed hardly probable that any would fail to recall roundness, diploic tissue and differing character of outer and inner tables, numerous bones with sutures varying in arrangement, also buttressing and groining as being conditions tending to minimize possibility of injury to the brain. The general average was 6.7+. Very many failed to give more than two or three points.

The third question, "Describe the external jugular vein," seemed to be a shock because the general average reached only 6.1+. This vein was selected for description on account of its diagnostic value in lesions of the right side of the heart. A question of this character may be considered to call for five divisions worth two points each, i. e., point of origin, and area drained; termination; line on surface indicating its course; whether deep or superficial, and valves.

It is surprising that so few answers made any mention of clinical observations of the incompetency of the lower set of valves and the consequent pulsation noticeable in lesion of the tricuspid valves. A few of the answers cannot fail to amuse and at the same time deepen our conviction that the practical facts of anatomy oftentimes elude us:

"The external jugular vein is formed by means of the lateral and straight sinuses and empties into the subclavian."

"The external jugular vein collects the blood from the brain and parts of the head. It extends from the jugular foramen at the base of the skull to junction with the innominate vein. In the neck it runs from the angle of the jaw to the middle of the clavicle."

"The external jugular vein extends from the junction of the external cerebral veins at the level of a line backward from the inferior maxillary to mastoid process, to the superior vena cava, into which it empties."

"It has in its course its own valves (vaso vasorum)."

"The external jugular vein is one of the largest vascular structures of its character in the body the blood pulsating in this vein as it does in an artery and in its essential structures histologically it possesses many of the characteristics of an artery. Hence there has been some dispute as to whether it should be classed as an artery or not."

The diagnostic value of the gross movements of the upper extremity was chosen as a vehicle for bringing out the main facts concerning the distribution of the branches of the brachial plexus. No particular value would attach to memorizing the

forty muscles in the fore-arm and hand but there is much value in being able to recognize peripheral paralyses of individual nerve divisions of a plexus by testing the action or non-action of the groups of muscles enervated by them. The question asked was, "What nerve governs (a) extension of the fore-arm, (b) flexion of the fore-arm, (c) flexion of the wrist and fingers, (d) pronation of the hand, (e) supination of the hand, (f) abduction and adduction of the fingers?"

The general average was 6.2+. This is surprisingly good when compared with the lower average on the preceding question.

For the fifth question seven bony points were selected because they serve in some degree as engineer's stakes from which to get one's bearings. The muscles attached to these points are large and important. The question was stated as follows: "What muscles are attached to (a) lesser trochanter of the femur, (b) coracoid process of the scapula, (c) pisiform bone, (d) head of the fibula, (e) lower angle of the scapula, (f) tubercle on the upper border of the first rib, (g) anterior inferior spine of the ilium?" Of the numerous answers worthy a smile two are here given:

1. "To lesser trochanter of femur—adductors and flexors of thigh."

"To coracoid process of scapula—serratus magnus."

"To pisiform bone—

"To head of fibula—tibialis anticus."

"To lower angle of scapula—pectoralis."

"To tubercle upper border of first rib—pectoralis minor."

"To anterior inferior spine of ilium—gluteus minimus, maximus and medius."

2. "(a) To lesser trochanter of femur—the five great muscles (by aponeurosis or flat tendon) that constitute the calf of the leg.

(b) To coracoid process of the scapula—is the deltoid muscle.

(c) To pisiform bone—Flexor Longus Digitorum.

(d) To head of fibula—Pronator radialis anticus.

(e) To lower angle of scapula—Pectoralis major and minor by tendinous aponeurosis.

(f) To tubercle on upper border of first rib—a tendinous aponeurosis of the pectoralis major and cervicalis major.

(g) To anterior inferior spine of ilium—By aponeurosis of the sartorius which produces partial flexion and crossing of the leg when in use."

It is hard to conceive of any greater distortion of the human frame than is here pictured by putting the pectorals on the back, the glutei in front and the calf muscles in the thigh, not to mention the other less startling deformities. The general average on this question is 5.9+.

The sixth question relates to the practical working knowledge required in diagnosis of injuries of the pelvis and the hip joint. As usual the question is divided into five parts so as to enable the applicant to secure a passing grade. It has been my

experience in several years of examination work that it is bad policy to ask a student to "describe." Under this general term of indefinite meaning the examiner is compelled to sift pages of words for a few concealed ideas. The question was "(a) What bony points on the posterior surface of the pelvis are at the level of the center of the sacro-iliac symphysis? (b) Between what bony points should measurements be taken to determine the length of the lower extremities? (c) What vertebral spine marks the lower limit of the membranes of the spinal cord and the cerebro-spinal fluid? (d) Between what bony points should a line be drawn to determine the normal position of the great trochanter of the femur? (e) What point on the thigh lies directly over the anterior surface of the capsule of the hip joint?"

This sixth composite question brought an average of 5.4+, the lowest in the list. Legs were measured from all sorts of uncertain points along the crest of the ilium, the great trochanter of the femur, the symphysis pubis, the umbilicus and the episternal notch to the heel, both malleoli and the great toe.

One answer to (a) was, "The lesser wings of the Pelvis."

As an example of descriptive power the following answer to (b) is given: "The Great Trochanter on the outer surface and the outer and lower border of the calcaneum. The inner the ischio sacral to the inner and lower border of the calcaneum in the middle of the posterior half."

Question seven, "What relation have the external and internal abdominal rings and the femoral ring to Poupart's ligament? (b) What are the boundaries of Hesselbach's triangle?" seems so much in line with general experience of all sorts and conditions of medical men that none should fail to answer it correctly. The latter section of the question seemed not to be any more difficult to answer than section (a). Witness these surprising answers:

1. "The external abdominal ring is situated just below the inner one-third of Poupart's ligament. The internal abdominal ring is superior to Poupart's ligament by one and one-half to two inches and lies internally to it. The femoral ring is directly behind Poupart's ligament and about its center."

2. "The internal abdominal ring lies internal to, behind and above Poupart's ligament. The external abdominal ring lies below, and just internal to Poupart's ligament. The femoral ring is above Poupart's ligament."

3. "The external abdominal ring lies below and external to Poupart's ligament. Internal ring lies below and internal to Poupart's ligament. The femoral ring lies below and external to it."

The general average secured was 7.7+.

Minor surgical operations of the hand are likely to be a part of any practitioner's work. Knowledge of the approximate position of the palmar arches should be remembered. The eighth question was, "Give the surface markings of the superficial and deep palmar arches and tell what arteries form them."

There are very few masterly answers to this

question. A large number were so tangled in terminology that much time was consumed in deciphering the meaning. Here are some samples of various types of answers:

1. "The superficial palmar arch is outlined by the tuberosity of the radius and the pisiform bone. The deep palmar arch lies deeper and a little below the superficial."

"The superficial arch is made up from a branch of the radial and a continuation of the ulnar. The deep arch is made up from the terminal of the radius and a branch of the ulnar."

2. "The junction of two lines drawn when the hand is perfectly in a supine position with all the digits in extension and in perfect apposition to each other. The one line drawn from the center of the prominence of bone at the wrist joint and the Phalangeal Metatarsal joint inner surface first digit and the second line from the outer prominence of the radius and the fourth Metatarsal Phalangeal articulation will disclose correct location of the arches beneath the junction of these two lines."

3. "Surface markings bear relation to the tendons from below upward."

General average 7+.

In previous examinations I asked for surface outlines of the liver, spleen and kidneys. It was unbelievable that anyone who had even a smattering of medical knowledge would place these important organs so far from their true positions as did some of the descriptions furnished me.

With the memory of these past experiences I decided to devise a plan of examining whereby the candidate could use his practical knowledge instead of perhaps losing his bearings in descriptive terminology. To this end a rubber stamp was made of an outline cut used for clinical record. The candidate was asked to outline the heart and liver on this cut. You will note the position of the nipple and the attachment of the diaphragm are indicated as guides.

Out of a large number of distortions I have selected nine answers for ocular demonstration to the profession that there is something radically wrong in the teaching of anatomy and that the most practical questions in the whole examination bring forth absolutely staggering answers.

If these outlines represent in any degree the candidates' ideas of the position of normal hearts and livers, what sort of treatment would be administered to the luckless patient, possessed of actually normal organs, who might consult these candidates?

The general averages in questions 9 and 10 were 7.8+ in each.

The general average for the ten questions was 64%. Of the 140 candidates 27 were below 60%, 62 were between 60% and 75%, 51 were above 75%.

Let me refer again in closing to the fact that the examination in anatomy seems to demonstrate a profound need of a Board of Examiners. If men cannot carry in mind during the busy hours of practice true conceptions of the simplest normal anatomical relations how can we expect to build rational practical medicine?